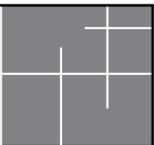


Item 1: Utility Mailer, Sent to Residents

<h2>Help Redmond Prepare for Natural Hazards</h2>	
<p>Help the City of Redmond prepare for future winter storms, earthquakes, and other hazards <i>AND</i> get the information you need to protect your home or business. Please take the following two easy steps to help update the Redmond Hazard Mitigation Plan.</p> <ol style="list-style-type: none">1) Take the short Hazard Preparedness Questionnaire by following the link found at: www.redmond.gov2) Share your thoughts and find out more at Redmond City Hall from 7:00 PM to 8:30 PM on <i>May 14, 2009 in the Bytes Café.</i> <p>CITY OF REDMOND</p>	

Item 2: Sample Outreach Email

Dear Principal,

I'm writing on behalf of the University of Washington's Urban Planning Graduate Program. We're working with the City of Redmond to update the City's Hazard Mitigation Plan. An important part of the plan is to ensure that all vulnerable populations, such as Redmond's youth, are protected from the effects of natural hazards like the winter storms we experienced at the end of 2008. We'd like to ask for your help in gathering the information needed to prepare this plan.

In order to for us to develop relevant governmental strategies, we would like to find out what preparedness and mitigation actions families have already taken. To that end, we have created a questionnaire on the Redmond City website, at <http://www.redmond.gov/surveys>. The Hazard Questionnaire is designed to gauge whether families have prepared for the isolation and separation they may face in hazard situations, solicit feedback on potential strategies, and to provide families with useful planning information. Of course, the questionnaire is confidential. The survey will be open until 6/15/2009.

We'll also be holding an interactive public discussion at 7:00pm on May 14, 2009 in the Bytes Café in City Hall to get more information from residents and share our findings to date.

We'd like to ask for your help in letting parents know about the questionnaire and the public meeting. We've prepared a short message at the end of this note that could be included in any web calendars, email or newsletters you regularly send to parents. Or, if you have another preferred communication method, we would be happy to work with you.

If you have any questions about the questionnaire or hazard mitigation planning project, please feel free to call me at the number below.

Thanks,

John Vander Sluis
Masters in Urban Planning candidate, 2010
Masters in Public Administration candidate, 2010
jvander@u.washington.edu
802-310-1259

Attached Message:

Help the City of Redmond and your family prepare for winter storms, earthquakes, pandemics, and other hazards. The City of Redmond and UW need your input to update the City Hazard Mitigation Plan. Please take the following two steps to make sure the plan meets your family's needs:

- 1) Take the Hazard Mitigation Questionnaire at <http://www.redmond.gov/surveys> to let the City know what preparedness steps you've taken, what the greatest risks are to your family, and to find useful information to make sure you've taken every measure to protect your home and family.
- 2) Share your thoughts and get more information at the Hazard Mitigation Strategy public meeting from 7:00pm to 8:30 pm on May 14, 2009 at the City Hall Bytes Café.

Please contact jvander@u.washington.edu with any questions about the survey or the public meeting.

Item 3: Scenario Used in Public Meeting

Earthquake Scenario 1

- 6.7 on the Richter
- Leads to landslides
- Wednesday evening in spring
- Less than one minute of shaking, but more severe than the Nisqually quake
- Region-wide impacts

Physical structures	Natural environment	People	Economy, Communication, other systems
<ul style="list-style-type: none"> • Collapse of 520 and I-90 bridges → community isolation • Buildings throughout Redmond collapse • Buildings in the liquefaction zones (incl. downtown commercial) most likely to collapse. Wood frame buildings least likely to collapse • Buildings on and below steep slopes damaged by landslides • Olympic pipeline ruptures → water contamination, hazardous material leakage • Power lines fall → no electricity for days 	<ul style="list-style-type: none"> • Hazardous materials leak into the streams, wells, groundwater from storage areas in the NE and SE, Olympic pipeline, and broken sewage lines. 	<ul style="list-style-type: none"> • Injury from falling objects & buildings • Isolation in residential areas • Lack of access to food • Lack of access to clean water in the short term, long-term well water contamination • Risk of carbon monoxide poisoning from using charcoal indoors to heat/cook. 	<ul style="list-style-type: none"> • Employees unable to get to work • Vendors unable to deliver goods • Businesses unable to ship goods • Damaged business computers → Data loss • Perishable foods spoil in grocery stores • Police, fire, ambulance services unable to reach Redmond • Redmond emergency services unable to use streets • Damage to cell towers & lack of electricity for internet/TV → No communication for days • Landslides block roads for days, preventing transportation and restoration of electricity

Potential Earthquake 1 Mitigation Strategies

	Strategy	Cost	Benefit	
1	Encourage development of multiple mixed-use centers to minimize separation of residents and resources	Low	Moderate	
2	Review culvert and other critical utilities system age, quality, location	Low	Moderate	
3	Maintain emergency auxiliary power sources for critical sites	High	High	
4	Develop non-well water emergency water supply	High	Low	
5	Develop on-foot emergency response procedures to avoid overdependence on surface streets and mobile transportation	Low	Moderate	
6	Focus growth and redundant / complementary public services in both Overlake and Downtown centers	Moderate	High	
7	Reinforce transportation connections between and to Overlake and Downtown, including pedestrian and bicycle networks	Low-High	High	
8	Provide incentives for seismic retrofitting of historic buildings, including tax credits, low interest revolving loans, grants, and/or municipal bonds	High	Moderate	
9	Consider hazards resiliency when siting new public facilities, especially those essential for continuity of operations & emergency management	Moderate	Moderate	
10	Create incentives for developers to build plazas at intersections to reduce street blockage from damaged buildings	Low	High	
11	Limit pedestrian overpasses to places where they are essential for pedestrian mobility	Low	Moderate	
12	Identify & create parks and open spaces for meeting places following events	Low	Low	
13	Identify, retrofit bike paths & secondary roads that can transport emergency supplies post-quake	Moderate	Moderate	
14	Inform citizens of the risks and response methods in a hazardous materials leak	Low	Low	
15	Strengthen building, structure, and storage codes for hazardous materials facilities	Low	Low	
16	Develop a backup switchboard for 911 calls to ensure redundancy of emergency service networks	Low	Low	

Item 4: Public Meeting “Passport”

Welcome to the Redmond Hazards Mitigation Plan Update public meeting!

Please take some time to familiarize yourself with the hazards Redmond may face in the future. The boards around the room feature information on the likely and unlikely hazards that could affect our region. Visit all of the boards - any order will work - and check the boxes as you go. Our team is on hand to answer your questions.

Earthquakes - Earthquakes like the Nisqually quake can affect Redmond and its connections to the rest of the region. Put a pushpin in the map at Station #1 to mark your home or office. Looking at the liquefaction area on the map think of the other buildings you use that might be made unsafe or inaccessible during a quake.

Floods - The Sammamish River floodplain is broad enough that floodwaters would rarely exceed a foot in depth. Nonetheless, lasting damage can occur. What kinds of damage can this level of flooding cause? What about floods that occur in winter? Write your ideas on the map with the post-it notes provided.

Wildfires - Why talk about fires in a place as wet and green as Redmond? Many scientists predict longer and drier summers in our future. Does it make sense to safeguard these areas now? If so, how? What parts of Redmond would you protect to preserve the city’s natural character?

Landslides - Landslides may be triggered by severe rains or winter storms, or from earthquakes. What streets might be closed due to landslides? Who uses those streets? Are there alternative routes available?

Hazardous Materials - Industries rely on chemicals that could present risks to people who are exposed to them. The Olympic pipeline running through the western part of Redmond is protected by a buffer that restricts any new development. Nonetheless, a spill could contaminate wells and groundwater. How else can we minimize our risk of exposure to these chemicals?

Heatwaves and Droughts - These hazards are highly unlikely to affect Redmond in the near future, although climate change could increase the odds. What preventative measures do other regions take that might make sense in Redmond?

Winter Storms - Last winter took many of us by surprise. Just like you, Redmond will be thinking of new ways to prepare for the risks of snow and ice. Using a post-it write your thoughts on how the city can best use its resources during snowstorms.

Pandemics - We’ve all heard about the recent swine flu epidemic. Was Redmond at risk, or was it all just overreaction? What additional measures could we have in place to make people feel secure even when the level of risk is unknown?

Thank you! Your participation and thoughts are very important. Please join us for a short exercise at Table ____.

Item 5: Public Meeting Agenda

Agenda

- 7:00 •••• Welcome and Sign-In
 Informational Hazard Station Visits

- 7:25 •••• Student Introduction/Hazards Presentation

- 7:35 •••• Scenario and Strategies Workshops

- 8:00 •••• Large Student/Public Regroup
 Discuss workshops results and identify themes

- 8:10 •••• Wrap Up and Conclusion
 Answer any remaining questions/comments from the public

What is Hazards Mitigation Planning?

The Hazards Mitigation Plan identifies the hazards Redmond faces (like severe storms, earthquakes, or pandemics) and outlines a set of strategies that can be implemented to lessen the impacts of those events. As part of this process we are working in conjunction with the Mitigation Implementation Committee or MIC, made up of Redmond City staff in Hazards Mitigation related fields such as the Emergency Management, Parks and Recreation, and Public Works. Mitigation can be defined as actions taken to prevent or remove the need to prepare, respond to, and recover from a hazard. Mitigation actions are strategies that can be done prior to a hazard, and are long term in scope. An example of a mitigation strategy would be securing alternative emergency water supplies for the City. This would remove the need to prepare stockpiled water, respond with deliveries of water to those who have lost supply, and recover by treating people who have not had access to water.

Please remember to take the short Hazard Mitigation Questionnaire at: www.redmond.gov/surveys
 Feel free to contact us with any comments or questions you may have at: studio67@u.washington.edu

Thanks for coming out and participating tonight!

The University of Washington
 College of Built Environments
 Department of Urban Design and Planning

Item 6a: MIC Meeting #1 Agenda

March 12, 2009

City of Redmond
Hazard Mitigation Planning Meeting
Kick off meeting with Mitigation Implementation Committee (MIC)

Agenda – Introduction and scoping meeting

1. Statement of purpose – Tom Osborn, Bob Freitag
2. Introductions – MIC and Project Team
3. Presentation of Scope – Tom Osborn, Bob Freitag
4. Discussion of status of Action items – Bob Freitag
5. Determination of priority hazards – Bob Freitag
6. Issue of Concern (As determined in 2006 and as perceived by Student Project Teams – Amanda Engstfeld
7. Clarification of public planning process – Tom Osborn, Brandon Born
 - a. Interactions with City
 - b. Data sources
 - c. Interaction with neighborhoods
 - d. Survey
8. Strengths, Weaknesses Opportunities and Threats (SWOT) – Bob Freitag
9. Next MIC meeting – Tom Osborn

Item 6b: MIC Meeting #1 Notes

Memo

To: Redmond Project Team
From: Bob Freitag
Subject: Notes on MIC meeting
Date: March 13, 2009

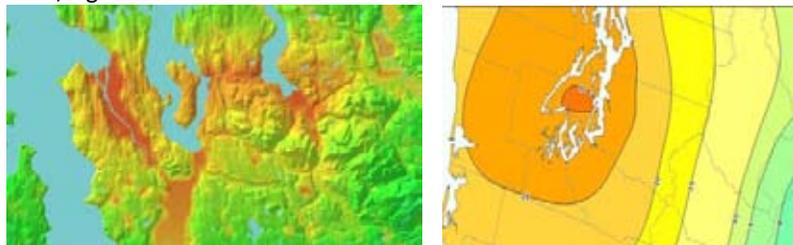
Issues of concern: (in no particular order)

1. Isolation:

- a. Concern about Redmond being isolated from surrounding communities
 - i. Business with Just-in-time issues
 - ii. 202 and 520 damage isolating City
 - iii. Many workers live outside city – business and city employees.
- b. Neighborhoods being isolated from commercial areas and other neighborhoods
 - i. Little walkability
 - ii. Neighborhoods lack services that can be reached on foot
 - iii. Ed...? Hill Neighborhood was isolated during 2008/2009 winter storm
 - iv. Commercial areas being isolated from other commercial areas as a result of earthquake and to limited degree – severe winter storm.
 - v. GIS task – look at street slopes and where streets cross vulnerabilities (street, small culvert at foot of slide area. Scenario could be that slide debris blocks culvert, dams water then when pressure exceeds strength of roadway the road washed out and the debris flows down hill causing more damage.

2. Frequency:

- a. Mitigation Plan should concentrate on higher frequency issues
 - i. When discussing earthquake solution may be to use higher frequency/lower impact probabilistic intensities to guide mitigation strategies but build in a fail safe for earthquakes such as the Seattle Fault. PGAs for Probabilistic intensities range from 20 – 30% PGA range. A Seattle Fault scenario cause PGA above 50 – 1.00%. Solution -- Build in preparedness and response measures to address a Seattle Fault, and mitigate to probabilistic intensities.
 1. Seattle Fault M6.7, epicenter Seward Park
 2. PGA with soil amplification
 3. Red: 1 g or greater
 4. Yellow: ~ 2/3 g
 5. Green: 1/3 g or less



3. Economy

- a. How will effect vulnerabilities

4. Power Outages are frequent

5. Debris Management

- i. Earthquakes generate lots of debris – look at King County, City debris management Plan.

Item 7: MIC Meeting #2 Agenda

MIC2 Agenda (90 minute meeting)

April 16, 2009

DRAFT

University of Washington Representatives: Chilan Ta, Ching Chan, Daniel Kastoryano , Doug McIntyre, Emily Slotnick and Michael Xenakis

I. Introduction and Context

II. Risk Assessment presentation and Q&A

- a. Earthquakes
- b. Landslides
- c. Winter Storms
- d. Floods
- e. Heat and Drought
- f. Fires
- g. Pandemics
- h. Hazardous Materials

III. Strategies Dot Exercise

Participants are handed 3 dots and asked to place them on the board according to which 3 strategies they see they could contribute to the most/can see they play a significant/relevant role, e.g. "As a representative of your department, thinking about what services you provides for Redmond area, under which hazard-risk category do you see yourself making the most contribution?"

Savings Bank for Ideas and Comments:

Record your ideas, comments, or suggestions in the space below, continued onto the back of the sheet. Alternatively, email any other ideas, comments, or suggestions to us at studio67@u.washington.edu

Item 8: MIC Meeting #3 Agenda

MIC3 Agenda (2 hour meeting)

May 19, 2009

DRAFT

I. Introduction

Discuss the public meeting, where the class is in the Plan process, the meeting agenda

II. Poster Board Sessions

6 groups will be made to view each hazard map and hazard specific strategies.

III. Group Discussions

Each group will be assigned one hazard to briefly summarize (aloud to everyone) the strategies and their opinions.

IV. Dot Exercise

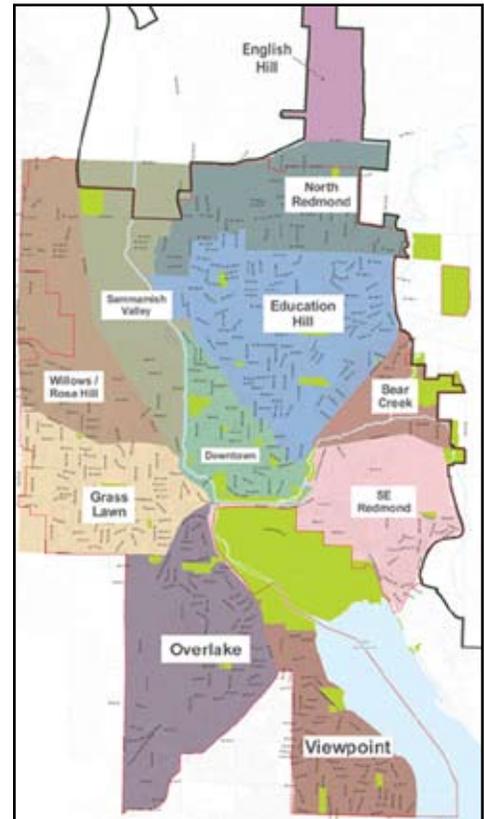
Each hazard will have its own strategy dot board for meeting participants to place dots on their "favorite" strategies.

V. Q/A and Comment Session

Item 9: Public Questionnaire Results

Why is Redmond important to you?	
I live in Redmond	45
I work in Redmond	9
I live and work in Redmond	31
Total	85

	Choose the neighborhood in Redmond where you...			
	...live	%	...work	%
English Hill	1	1.3%	0	0.0%
N. Redmond	11	14.5%	2	5.0%
Sammamish Valley	0	0.0%	2	5.0%
Willows/Rose Hill	2	2.6%	1	2.5%
Education Hill	34	44.7%	3	7.5%
Bear Creek	2	2.6%	0	0.0%
Downtown	4	5.3%	8	20.0%
Grass Lawn	2	2.6%	0	0.0%
SE Redmond	0	0.0%	2	5.0%
Overlake/Microsoft	9	11.8%	22	55.0%
Viewpoint	4	5.3%	0	0.0%
Redmond Ridge	7	9.2%	0	0.0%



What types of hazards have you experienced in the past? Select all that apply.		
Earthquake	68	80.0%
Landslide	5	5.9%
Winter storm	82	96.5%
Flood	25	29.4%
Heatwave	38	44.7%
Drought	34	40.0%
Wildfire	11	12.9%
Disease pandemic	2	2.4%
Hazardous material	10	11.8%
None	1	1.2%
Other*	10	11.8%

Others: volcano eruption (3), traffic (2), hurricane, tornado, power outage, no snow removal.

Item 9: Public Questionnaire Results

From the choices below, please rank the hazards that concern you the most in terms of how they may affect Redmond.						
	1st Choice	2nd Choice	3rd Choice	4th Choice	5th Choice	Weighted Score
Earthquakes	49	25	5	2	1	365
Landslide	0	1	3	7	0	27
Winter Storm	28	34	5	5	1	302
Flood	1	7	12	5	4	83
Heatwave	0	0	0	2	6	10
Drought	0	1	4	6	4	32
Wildfire	0	0	11	6	2	47
Pandemic	2	5	11	7	9	86
HazMat	1	2	7	9	8	60
Terrorism	1	5	9	5	7	69
Other*	3	2	1	0	0	26

"Other" included: no snow removal, helicopter crashes, wind storms, traffic

"Weighted Score" = (5*1st + 4*2nd + 3*3rd + 2*4th + 1*5th)

Top 5 Hazards (as ranked)	
1st	Earthquakes
2nd	Winter storm
3rd	Pandemic
4th	Flood
5th	Terrorism

What steps have you taken to prepare your home for hazards or emergencies?		
Smoke detectors	73	96.1%
Flashlights	73	96.1%
Battery-powered radio	62	81.6%
Fire extinguisher	65	85.5%
Spare batteries	63	82.9%
Secured water heater	56	73.7%
Stored extra food	57	75.0%
Stored extra water	54	71.1%
Located util shut-offs	51	67.1%
Medical supplies/prescriptions	38	50.0%
Fastened home to foundation	32	42.1%
First Aid/CPR cert	30	39.5%
Supply kit	31	40.8%
Fire escape plan	21	27.6%
Family communication plan	24	31.6%
Secured tall furniture	21	27.6%
Moved heavy objects	15	19.7%
Other*	5	6.6%
None	0	0.0%

* Other Includes: purchased electric generator, removed hazard trees, emerg. supplies in cars, taking CERT classes

APPENDIX A: PUBLIC PROCESS

Item 9: Public Questionnaire Results

In general, how prepared do you feel you are (as a resident) for disasters in Redmond?		
Highly prepared	12	14.1%
Somewhat prepared	52	61.2%
Somewhat unprepared	17	20.0%
Highly unprepared	4	4.7%
Not sure	0	0.0%

	ever used?		found most valuable?	
Federal govt	18	23.7%	3	3.9%
State govt	16	21.1%	5	6.6%
Local govt	27	35.5%	11	14.5%
Military	2	2.6%	1	1.3%
Red Cross	22	28.9%	8	10.5%
Newspaper	23	30.3%	9	11.8%
TV/Radio	24	31.6%	9	11.8%
Coursework	7	9.2%	2	2.6%
Place of work	15	19.7%	4	5.3%
Public meetings	6	7.9%	0	0.0%
Church	3	3.9%	3	3.9%
Other*	19	25.0%	21	27.6%

*Other Includes: internet resources (5), magazine, personal experience

To the best of your knowledge, do you . . .		
live in floodplain?	Yes	4
	No	69
	Don't Know	3
have floodpain insurance?	Yes	3
	No	10
	Don't Know	63
live in liquefaction zone?	Yes	4
	No	21
	Don't Know	51
have earthquake insurance?	Yes	26
	No	14
	Don't Know	36

Item 9: Public Questionnaire Results

What steps has your employer taken to prepare your business for a disaster?		
Trained employees in preparedness and response	21	52.5%
Conducted emergency drills	20	50.0%
Created evacuation plans	20	50.0%
Identified vital records and protect computer data and equipment	15	37.5%
Established communication plans to communicate with employees, vendors, customers, and the media.	15	37.5%
Offsite/out of area back up of computer files and physical papers	12	30.0%
Prepared sources of emergency power to support critical operations and secure records	12	30.0%
Provided employees with information to prepare for disasters at their homes to enable them to return to work sooner.	11	27.5%
Conducted hazard vulnerability analyses of all buildings	10	25.0%
Encouraged and track annual influenza vaccination for employees	10	25.0%
Made sure insurance covers business equipment and supplies	8	20.0%
Created an emergency supply kit with food, first aid, and other supplies.	5	12.5%
Set up an emergency cash reserve	5	12.5%
Other (includes: inviting emergency services speakers, don't know (3)	6	15.0%
Purchased business interruption insurance	4	10.0%
Developed and planned for scenarios likely to result in an increase or decrease in demand for your products and/or services during a pandemic (e.g. effect of restriction on mass gatherings, need for hygiene supplies)	5	12.5%
Shared best practices with other businesses in your communities, chambers of commerce, and associations to improve community response efforts	4	10.0%
Stored enough drinking water for employees and customers in case an event strands them at work – at least one gallon per person per day - for a minimum of three days	3	7.5%
Anchored office equipment, production equipment, and warehousing facilities	3	7.5%
Determined potential impact of a pandemic on company business financials using multiple possible scenarios that affect different product lines and/or production sites	4	10.0%
Practiced table-top exercises	2	5.0%
Replaced windows with shatterproof glass	2	5.0%
Trained and prepared ancillary workforce (e.g. contractors, employees in other job titles/descriptions, retirees)	1	2.5%
None	3	7.5%

Item 9: Public Questionnaire Results

In general, do you feel your workplaces prepared for disasters that could occur in Redmond?		
Yes	21	52.5%
No	7	17.5%
Not sure	12	30.0%

Do you have people with any of the following characteristics living in your home?		
Children (under 18)	37	48.7%
Senior citizens	11	14.5%
People with physical disabilities	2	2.6%
ESL	6	7.9%

What resources do you think could better prepare your workplace for a disaster or emergency?		
Business-oriented disaster planning	17	42.5%
None	12	30.0%
Mitigation incentives	9	22.5%
Tax breaks	9	22.5%
Recovery grants	6	15.0%
Flood risk info	8	20.0%
Recovery loans	3	7.5%
Business helpline	3	7.5%
Flood repair info	5	12.5%
Financial literacy	2	5.0%
Other	3	7.5%
Help with temp workers	0	0.0%

Do you have people with any of the following characteristics at your work?		
Senior citizens	18	45.0%
People with physical disabilities	26	65.0%
ESL	26	65.0%

Please select the age group that contains your age	
under 18	0
18 to 29	3
30 to 39	27
40 to 49	21
50 to 59	22
60 or older	9
refused	3

Where did you learn about the questionnaire?		
Utility flyer	44	51.8%
Redmond homepage	15	17.6%
Word of mouth	3	3.5%
UW student	8	9.4%
Other	15	17.6%
"Other" Includes:		
community email		
Redmond Elementary / School Email (2)		
Neighborhood newsletter		
Announcement from homeowners association (4)		
Greater Redmond Chamber of Commerce		
News		
email request		
Handed a flyer at Redmond Town Center		
Redmond Blog (3)		
City of Redmond announcement		

Please select the income group that contains your income	
<\$30,000	3
\$30,000 - 60,000	5
\$60,000 - 90,000	12
\$90,000 - 120,000	18
\$120,000 +	27
refused	11

Item 9: Public Questionnaire Results

What strategies should the city take to mitigate the effects of hazards?					
	Very worthwhile	Somewhat worthwhile	Not worthwhile	A waste of time and resources	Relative Rank
Mitigating future development	69.8%	20.9%	3.5%	4.7%	156
Mitigating existing development	36.0%	46.5%	8.1%	8.1%	110
Natural resources	60.5%	26.7%	8.1%	3.5%	144
Structural projects	39.5%	51.2%	5.8%	2.3%	128
Emergency services	87.2%	10.5%	1.2%	0.0%	185
Public awareness and education	54.7%	40.7%	1.2%	2.3%	148
"Relative Rank" = (2*very worthwhile + 1*somewhat worthwhile - 1*waste of time)					
Other Responses Include					
I think it's up to people to prepare themselves or take responsibility for where they live. Being able to offer information to people would be the best thing the city could do for its current residents. Going forward, keeping people from doing things like building in poor locations is a minimal impact way to mitigate potential problems (such as through planning and zoning, building codes, open space preservation, and floodplain regulations).					
Alternative communication planning, awareness to public of disaster response/coordination center, report to community of supply stockpiles and planned distribution points in emergencies.					
In regards to emergency services, it would be great if the city utilized its website more for the community to gain information about exact road conditions, especially during winter storms (similar to Bellevue's website). Thank you.					
Regulatory incentives that encourage people to either build out of hazard areas or mitigate against them. Make individual property owners liable for mitigation strategies.					
The best approach is zoning and construction codes which prevent improper use of land subject to issues like floods and landslides. Construction codes should be rigid enough to ensure new buildings are earthquake resistant, fire resistant and contain mitigation features like sprinklers, fire extinguishers and solid construction practices. Don't develop flood plains for uses that are not compatible with lots of water!					
I am amazed at the level of un-education in the public, or at least at the level that communications are aimed at.					
Direct mailings to residences/business with reference to websites for more information. Incentive for business to have a disaster preparedness plan.					
Make sure info is in Redmond Focus magazine					
When there is a storm and the power might go out, the message from the city is to prepare for multiple days without heat. That is not good advice for apartment dwellers. Many of us have fireplaces - many of us don't know how to use them - please open community sites for heat and safety. When there is a storm, all the city facilities close - no senior center, city hall, etc. == those sites should stay open as safety sites for all major storms. By the way, no power = no web					
Community Action and Organizing to prepare for or after a natural disaster or hazard so that we can be better connected and help each other during rough times.					
Teach people that emergency packs should have plain water and real food (canned meat, fish, fruit etc.) and not merely junk like Cheetos and candy. Remind people to keep extra pet food and pet meds in their emergency packs along with a bottle of hydroge					

APPENDIX B: MITIGATION STRATEGY

Item 1: Benefit Cost Analysis of Action Items (2/3)

Strategy - Action Item	Description of Action Item	Project Benefit*	Project Cost**	Benefit / Cost***	Associated Hazards									
					Severe Storms	Earthquakes	Flooding	Wildland Fire	Landslides	Pandemics	Heat Waves	Drought	Hazardous Materials	
Two - 2	Develop alternative redundant services off floodprone, liquefiable lands.	high	medium	high	x	x	x							
Two - 3	Integrate the HMP goal of creating decentralized centers into the comprehensive plan to provide further support for existing policies supporting multiple centers. Consider hazards in general planning decisions	high	low	high	x	x	x							
Three - 1	Provide incentives for seismic retrofitting of historic buildings, including tax credits, low interest revolving loans, code compliance, grants, and/or municipal bonds.	low	medium	low		x								
Three - 2	Create an inventory of susceptible buildings, culverts, roads and other critical utilities. Use inventory to prioritize retrofits of City assets.	low	medium	low	x	x	x		x					
Three - 3	Retrofit emergency response and operation centers, if necessary to withstand severe ground shaking	medium	medium	medium										
Four - 1	Harden multi-modal connections between Downtown, Overlake to provide access to protected emergency centers.	medium	high	low										
Four - 2	Develop bicycle and pedestrian network that can serve as secondary route to transport emergency supplies.	medium	low	medium	x	x	x							

Project Benefit*
 Low = May save lives, or property and environment worth less than \$1 Million
 Med = May save lives, property and environment worth < \$10 M but > \$1 M
 High = Saves lives and/or > \$10 M in property or environment

Project Cost**
 Low = Existing budget
 Med < \$1M in additional funds
 High > \$1M in additional funds

Benefit / Cost***
 Low = B/C < 1
 Med = B/C 1 - 2
 High = B/C > 2

APPENDIX B: MITIGATION STRATEGY

Item 1: Benefit Cost Analysis of Action Items (3/3)

Strategy - Action Item	Description of Action Item	Project Benefit*	Project Cost**	Benefit / Cost***	Associated Hazards										
					Severe Storms	Earthquakes	Flooding	Wildland Fire	Landslides	Pandemics	Heat Waves	Drought	Hazardous Materials		
Four - 3	Develop an emergency conditions roadway management plan. The plan will address installing traffic signals not reliant on the power grid, preemptively applying de-icer to roads and sidewalks at the time of major storm warnings, prioritize street clearing by key access points and community vulnerability (not road hierarchy), and other relevant issues.	high	low	high	x	x									
Four - 4	Modify design guidelines to promote incorporation of hazard sensitive urban design.	medium	low	medium	x	x		x	x					x	
Five - 1	Develop a specific outreach program promoting existing contingency planning tools available through the Washington EMD Business Portal	low	low	low	x	x		x		x			x		
Five - 2	Encourage businesses to partner, thereby sharing resources and risks (e.g. cold storage, alternative power).	medium	low	medium	x	x		x	x				x	x	
Six - 1	Monitoring localized climate change impacts.	medium	low	medium	x			x	x				x		
Six - 2	Performing hydrologic and hydraulic analyses that factor in climate change scenarios as well as future land use.	medium	low	medium	x			x	x				x		
Six - 3	Add flood storage lands to floodplain delineations that accommodate climate change scenarios and identify impacts. This may result in amending the Flood Hazards Management Plan.	low	low	low							x			x	
Six - 4	Promote a discussion of the beneficial impacts of flooding within valley communities	low	low	low											x

Project Benefit*
 Low = May save lives, or property and environment worth less than \$1 Million
 Med = May save lives, property and environment worth < \$10 M but > \$1 M
 High = Saves lives and/or > \$10 M in property or environment

Project Cost**
 Low = Existing budget
 Med < \$1M in additional funds
 High > \$1M in additional funds

Benefit / Cost***
 Low = B/C < 1
 Med = B/C 1 - 2
 High = B/C > 2

Item 2: Benefit Cost Analysis of Action Items for Emerging Hazards

Action Items that Address Emerging Hazards				Associated Hazards								
Description of Action Item	Project Benefit*	Project Cost**	Benefit / Cost ***	Severe Storms	Earthquakes	Flooding	Wildland Fire	Landslides	Pandemics	Heat Waves	Drought	Hazardous Materials
Use Class A roofing materials on city buildings that are tested ASTM E108 or UL 790.	low	high	low				x					
Choose wall materials for city buildings that resist heat and flames, such as cement, plaster, stucco and concrete masonry.	low	high	low				x					

Project Benefit*
 Low = May save lives, or property and environment worth less than \$1 Million
 Med = May save lives, property and environment worth < \$10 M but > \$1 M
 High = Saves lives and/or > \$10 M in property or environment

Project Cost**
 Low = Existing budget
 Med < \$1M in additional funds
 High > \$1M in additional funds

Benefit / Cost***
 Low = B/C < 1
 Med = B/C 1 - 2
 High = B/C > 2

Item 3: Benefit Cost Analysis of Items for Hazards Managed by Outside Agencies

Action Items for Hazards Managed by Outside Agencies		Associated Hazards											
Outside Agency	Description of Action Item	Project Benefit*	Project Cost**	Benefit / Cost ***	Severe Storms	Earthquakes	Flooding	Wildland Fire	Landslides	Pandemics	Heat Waves	Drought	Hazardous Materials
CAO	Restrict all building near or on steep slopes, near drainage ways or natural erosion valleys.	medium	low	medium		x			x				
EPA	Consider amendment of codes within Redmond if more stringent regulations are required for storage of hazardous materials and construction of their facilities	medium	low	medium									x
EPA	Consult building and fire codes for appropriate construction of facilities housing hazardous materials.	medium	low	medium				x					x
EPA	Isolate and/or buffer Tier II facility/locations from residential/commercial areas where appropriate in the future to minimize exposure risks.	medium	low	medium									x
Regional	Organize frequent review of the scientific research on the geology and meteorology of the Redmond area.	low	medium	low								x	

Project Benefit*
 Low = May save lives, or property and environment worth less than \$1 Million
 Med = May save lives, property and environment worth < \$10 M but > \$1 M
 High = Saves lives and/or > \$10 M in property or environment

Project Cost**
 Low = Existing budget
 Med < \$1M in additional funds
 High > \$1M in additional funds

Benefit / Cost***
 Low = B/C < 1
 Med = B/C 1 - 2
 High = B/C > 2

APPENDIX B: MITIGATION STRATEGY

Item 4: Benefit Cost Analysis of Rejected Action Items (1/2)

Rejected Action Items			Associated Hazards									
Description of Action Item	Project Benefit*	Project Cost**	Benefit / Cost ***	Severe Weather	Earthquakes	Flooding	Wildland Fire	Landslides	Pandemic	Heat Wave	Drought	Hazardous Materials
Develop an emergency conditions roadway management plan: lead education program for winter storm driving	medium	medium	medium				x	x				
Incentivize emergency radio use; provide emergency radio infrastructure and work with local broadcast stations to ensure real-time weather updates during heavy storm events.	medium	medium	medium	x				x				x
Design and implement permeable pavements to allow contamination-free seepage and incorporate groundwater management into future planning.	medium	high	low			x		x				x
Remove vegetation near vulnerable fire hazard areas	medium	medium	medium									
Encourage the purchasing of flood insurance	low	low	medium					x				x
Educate the public on personal flood mitigation strategies (e.g. sump pumps)	low	low	medium									x
Consider underground power routing in areas of high tree coverage for future development and design.	high	high	medium				x	x				
Develop an emergency conditions roadway management plan: install traffic signals not reliant on the power grid	high	high	medium				x	x				
Identify emergency management grants available for funding utility retrofits.	high	low	high	x								
Encourage multiple mixed-use development centers to minimize residential separation from resources.	high	low	high	x								

Project Benefit*
 Low = May save lives, or property and environment worth less than \$1 Million
 Med = May save lives, property and environment worth < \$10 M but > \$1 M
 High = Saves lives and/or > \$10 M in property or environment

Project Cost**
 Low = Existing budget
 Med < \$1M in additional funds
 High > \$1M in additional funds

Benefit / Cost***
 Low = B/C < 1
 Med = B/C 1 - 2
 High = B/C > 2

Rejected for one of the following reasons:

- (1) Not financially viable
- (2) City is already addressing the action item
- (3) Overlaps with another action item
- (4) Not feasible

Item 4: Benefit Cost Analysis of Rejected Action Items (2/2)

Rejected Action Items			Associated Hazards									
Description of Action Item	Project Benefit*	Project Cost**	Benefit / Cost ***	Severe Weather	Earthquakes	Flooding	Wildland Fire	Landslides	Pandemic	Heat Wave	Drought	Hazardous Materials
Develop a communication plan between the City and the public to identify emergency shelters	medium	low	medium	x			x	x		x		x
Provide incentives for residents in the slide hazard zone to update their buildings – increasing groundcover and installing flexible pipe fittings to avoid gas or water leaks	medium	high	low	x		x						
Maintain emergency auxiliary power sources for critical sites	low	medium	low	x				x				
Identify churches, schools and other areas that have air conditioning and could be opened to residents in the event of a heat wave.	low	medium	low						x			
Provide incentives for raising homes out of the floodplain	low	high	low					x				x
Design LID permeable pavements that incorporate filtration systems for runoff: this will enable water to slowly move down hillsides and minimize oversaturation.	medium	high	low	x				x				x
Restore natural meanders in river	medium	high	low									x
Provide incentives for residential home insulation upgrades, including energy efficient doors and windows.	low	high	low	x								x

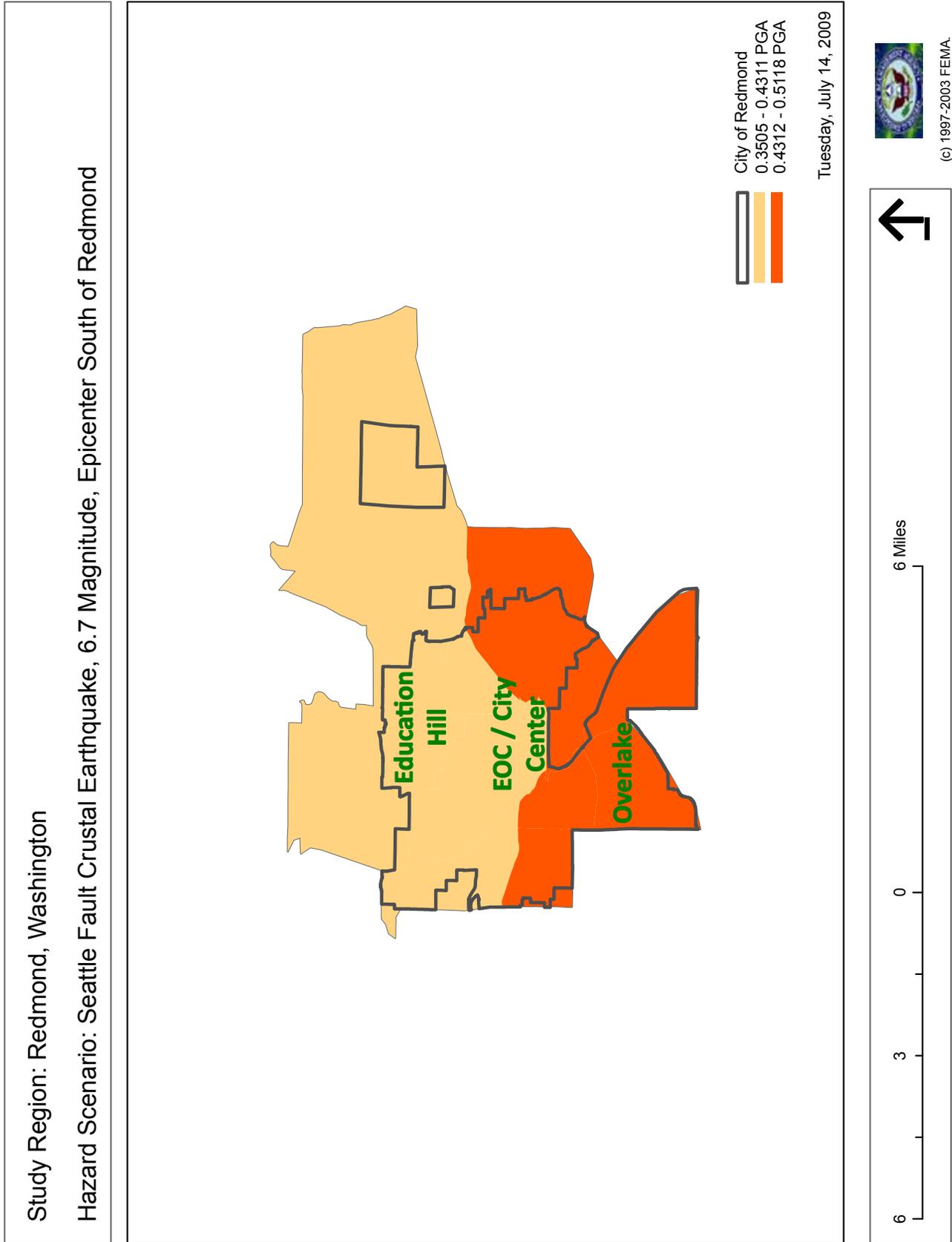
Project Benefit*
 Low = Existing budget
 Med < \$1M in additional funds
 High > \$1M in additional funds

Project Cost**
 Low = Existing budget
 Med < \$1M in additional funds
 High > \$1M in additional funds

Benefit / Cost***
 Low = B/C < 1
 Med = B/C 1 - 2
 High = B/C > 2

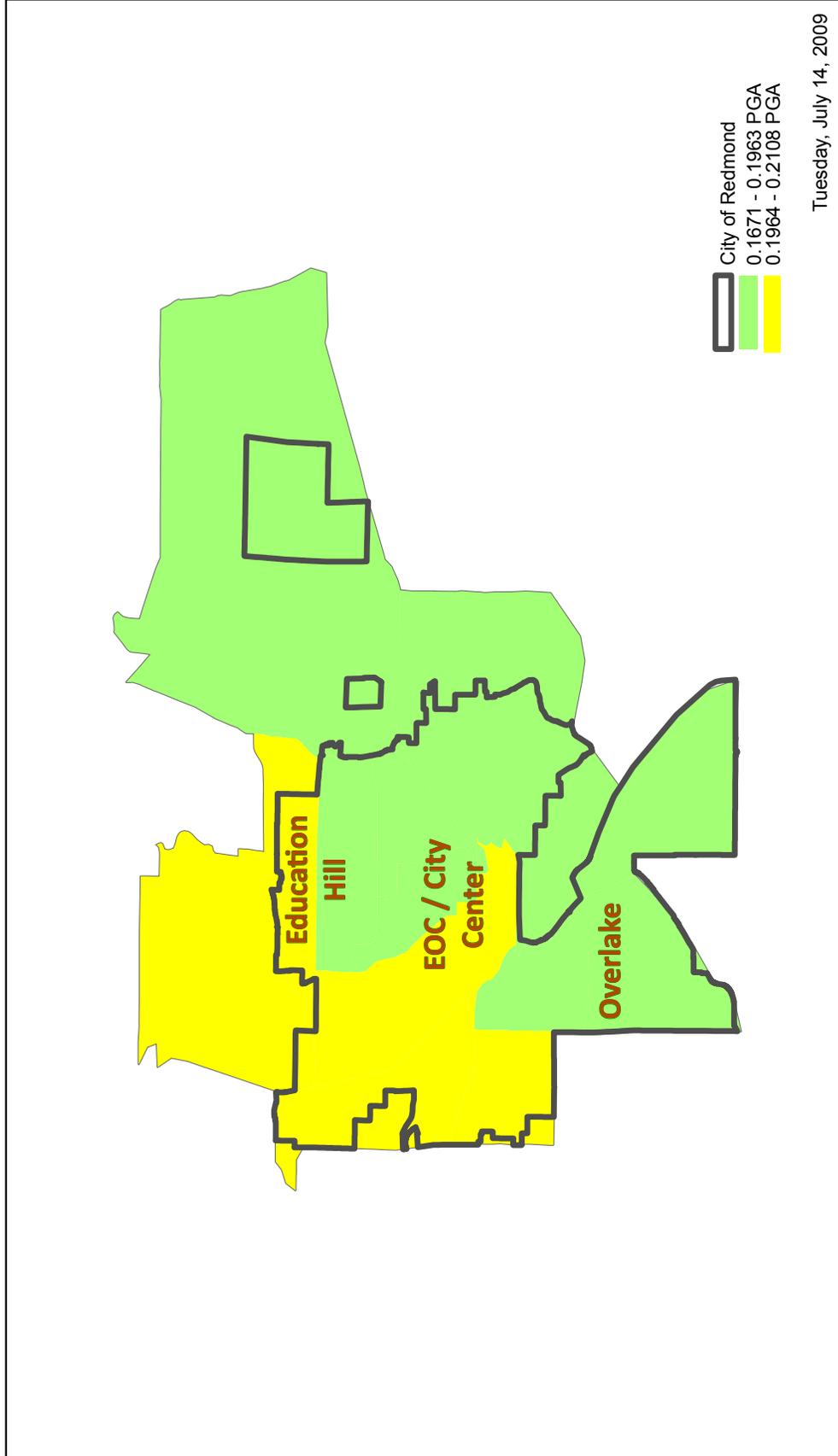
Rejected for one of the following reasons:
 (1) Not financially viable (2) City is already addressing the action item
 (3) Overlaps with another action item (4) Not feasible

Item 1: Peak Ground Acceleration for 6.7 Magnitude Seattle Fault Earthquake



Item 2: Peak Ground Acceleration for 7.1 Magnitude So. Whidbey Island Fault Earthquake

Study Region: Redmond, Washington
Hazard Scenario: South Whidbey Island Fault Crustal Earthquake, 7.1 Magnitude, Epicenter NW of Redmond



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APPENDIX D: EXPOSURE ESTIMATES

Item 1: Vulnerabilities By Type of Hazard and Total Exposure Risk

Liquefaction Zone	
Vulnerability	Number
Unknown Bld type	26
Public Buildings	50
Commercial Buildings	1892
Single-Family Res	787
Multi-Family Res	203

Landslide	
Vulnerability	Number
Unknown Bld type	2
Public Buildings	1
Commercial Buildings	307
Single-Family Res	811
Multi-Family Res	65
Road Sections	516
Culverts	69

100-Year Floodplain	
Vulnerability	Number
NFIP holders	143
NFIP claims	0
Repetitive loss properties	0
Unknown Bld type	2
Public Buildings	9
Commercial Buildings	463
Single-Family Res	116
Multi-Family Res	50
Road sections	149
Culverts	79

Wildfire	
Vulnerability	Number
Public Buildings	1
Commercial Buildings	227
Single-Family Res	513
Multi-Family Res	45

Estimated Exposure Risk for City of Redmond	
Square Footage:	144,329,270
Replacement Value*:	\$3,874,830,340
Contents Value*:	2610632085
Daily Revenue Loss*:	\$2,864,414
HAZUS Total Exposure in Dollars:	\$5,459,207,000
*Estimated using formulas in FEMA 386-2, <i>State And Local Mitigation Planning How-To Series: Understanding Your Risks: Identifying Hazards and Estimating Losses</i>	

Instructions for Using the Plan Review Crosswalk for Review of Local Mitigation Plans

Attached is a Plan Review Crosswalk based on the **Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000**, published by FEMA, dated March 2004. This Plan Review Crosswalk is consistent with the **Disaster Mitigation Act of 2000** (P.L. 106-390), enacted October 30, 2000 and **44 CFR Part 201 – Mitigation Planning, Interim Final Rule** (the Rule), published February 26, 2002.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer’s comments must be provided.
S – Satisfactory: The plan meets the minimum for the requirement. Reviewer’s comments are encouraged, but not required.
 Each requirement includes separate elements. All elements of a requirement must be rated “Satisfactory” in order for the requirement to be fulfilled and receive a summary score of “Satisfactory.” A “Needs Improvement” score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.
 When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, reviewers may want to put an N/A in the prerequisite box for single jurisdiction plans.
 States that have additional requirements can add them in the appropriate sections of the **Multi-Hazard Mitigation Planning Guidance** or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.
 Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.

Example

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the new or updated plan include an overall summary description of the jurisdiction’s vulnerability to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		✓
B. Does the new or updated plan address the impact of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. Required Revisions: <ul style="list-style-type: none"> • Include a description of the impact of floods and earthquakes on the assets. Recommended Revisions: <ul style="list-style-type: none"> • This information can be presented in terms of dollar value or percentages of damage. 	✓	
SUMMARY SCORE			✓	

Local Mitigation Plan Review and Approval Status			
Jurisdiction: City of Redmond	Title of Plan: Hazards Mitigation Plan Update	Date of Plan: August 2009	
Local Point of Contact:		Address:	
Title:			
Agency:			
Phone Number:		E-Mail:	
State Reviewer:	Title:	Date:	
FEMA Reviewer:	Title:	Date:	
Date Received in FEMA Region [Insert #]			
Plan Not Approved			
Plan Approved			
Date Approved			
Jurisdiction:	NFIP Status*		CRS Class
1.	Y	N	N/A
2.			
3.			
4.			
5. [ATTACH PAGE(S) WITH ADDITIONAL JURISDICTIONS]			
* Notes: Y = Participating N = Not Participating N/A = Not Mapped			
June 2008			

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted. Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a "Needs Improvement" score.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)

	NOT MET	MET
1. Adoption by the Local Governing Body: §201.6(c)(5) OR		
2. Multi-Jurisdictional Plan Adoption: §201.6(c)(5) AND		N/A
3. Multi-Jurisdictional Planning Participation: §201.6(a)(3)		N/A

Planning Process

	N	S
4. Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)		S

Risk Assessment

	N	S
5. Identifying Hazards: §201.6(c)(2)(i)		S
6. Profiling Hazards: §201.6(c)(2)(i)		S
7. Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		S
8. Assessing Vulnerability: Addressing Repetitive Loss Properties: §201.6(c)(2)(ii)		N/A
9. Assessing Vulnerability: Identifying Structures, Infrastructure, and Critical Facilities: §201.6(c)(2)(ii)(B)		S
10. Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		S
11. Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		S
12. Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)		N/A

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

Mitigation Strategy

	N	S
13. Local Hazard Mitigation Goals: §201.6(c)(3)(i)		S
14. Identification and Analysis of Mitigation Actions: §201.6(c)(3)(i)		S
15. Identification and Analysis of Mitigation Actions: NFIP Compliance: §201.6(c)(3)(ii)		S
16. Implementation of Mitigation Actions: §201.6(c)(3)(iii)		S
17. Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		N/A

Plan Maintenance Process

	N	S
18. Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)		S
19. Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		S
20. Continued Public Involvement: §201.6(c)(4)(iii)		S

Additional State Requirements*

	N	S
Insert State Requirement		
Insert State Requirement		
Insert State Requirement		

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED
 See Reviewer's Comments
 PLAN APPROVED

PREREQUISITE(S)

1. Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Has the local governing body adopted new or updated plan?		The local governing body is prepared to adopt the plan upon State and FEMA approval		
B. Is supporting documentation, such as a resolution, included?		A sample of the resolution is included		
SUMMARY SCORE				

2. Multi-Jurisdictional Plan Adoption

Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the new or updated plan indicate the specific jurisdictions represented in the plan?	N/A			
B. For each jurisdiction, has the local governing body adopted the new or updated plan?	N/A			
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?	N/A			
SUMMARY SCORE				

3. Multi-Jurisdictional Planning Participation

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process ... Statewide plans will not be accepted as multi-jurisdictional plans.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the new or updated plan describe how each jurisdiction participated in the plan's development?	N/A			
B. Does the updated plan identify all participating jurisdictions, including new, continuing, and the jurisdictions that no longer participate in the plan?	N/A			
SUMMARY SCORE				

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

PLANNING PROCESS: §201.6(b): *An open public involvement process is essential to the development of an effective plan.*

4. Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:*

- (1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
- (2) *An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and*
- (3) *Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

Requirement §201.6(c)(1): *[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan provide a narrative description of the process followed to prepare the new or updated plan?	Part 2, Chapter 3 (pp.33-42)			
B. Does the new or updated plan indicate who was involved in the current planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	List of Contributors, Part 2, Chapter 3 (pp.i, 33-42)			
C. Does the new or updated plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	Part 2, Chapter 3.2 (pp. 34-36)			
D. Does the new or updated plan discuss the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	Part 2, Chapter 3 (pp. 33-42)			
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	Part 1, Chapter 1 (pp.5-6, 11)			
F. Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process?	Throughout			
SUMMARY SCORE				

RISK ASSESSMENT: §201.6(c)(2): *The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

5. Identifying Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment shall include a] description of the type ... of all natural hazards that can affect the jurisdiction.*

Element	Location in the Plan (section or annex and page #)		Reviewer's Comments	SCORE	
	N	S		N	S
A. Does the new or updated plan include a description of the types of all natural hazards that affect the jurisdiction?	Part 3 (pp. 51, 61, 75, 93, 101, 111, 119, 123, 129)		The first part of each Chapter in Part 3 identifies and describes a natural hazard that affects the jurisdiction.		
SUMMARY SCORE					

6. Profiling Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment shall include a] description of the ... location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.*

Element	Location in the Plan (section or annex and page #)		Reviewer's Comments	SCORE	
	N	S		N	S
A. Does the risk assessment identify the location (i.e., geographic area affected) of each natural hazard addressed in the new or updated plan?	Part 3 (pp. 52, 62-66, 76, 94, 102, 113, 119, 125, 009)				
B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the new or updated plan?	Part 3 (pp. 52, 62-66, 76, 94, 102, 113, 119, 125, 009)				
C. Does the plan provide information on previous occurrences of each hazard addressed in the new or updated plan?	Part 3 (pp. 52, 62-66, 76, 94, 102, 113, 119, 125, 009)				
D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the new or updated plan?	Part 3 (pp. 52, 62-66, 76, 94, 102, 113, 119, 125, 009)				
SUMMARY SCORE					

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

7. Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the new or updated plan include an overall summary description of the jurisdiction’s vulnerability to each hazard?	Part 3 (pp. 63, 67, 79, 95, 103, 115, 120, 127, 131)			
B. Does the new or updated plan address the impact of each hazard on the jurisdiction?	Part 3 (pp. 63, 67, 79, 95, 103, 115, 120, 127, 131)			
SUMMARY SCORE				

8. Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): [The risk assessment] must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the new or updated plan describe vulnerability in terms of the types and numbers of repetitive loss properties located in the identified hazard areas?	Part 3, Chapter 6 (pp. 75-82)	There are none repetitive loss properties in Redmond.		
SUMMARY SCORE				

9. Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?	Part 3 Chapters X.3; Appendix D (pp. 181)	Exposure numbers are included in the risk assessment.		

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

B. Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?	Part 3 and Part 4 (Strategy 2 pp.142-143)	This plan addresses the need for facilities outside of the hazard areas	
SUMMARY SCORE			

10. Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): [The plan *should* describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate ...

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan estimate potential dollar losses to vulnerable structures?	Part 3, Chapter 5 (pp.71); Appendix D (pp. 181)	Information about potential dollar losses from an earthquake is described in Chapter 5		
B. Does the new or updated plan describe the methodology used to prepare the estimate?	Part 3, Chapter 5 (pp. 71)	Chapter 5 estimates for dollar losses were based on HAZUS.		
SUMMARY SCORE				

11. Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): [The plan *should* describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe land uses and development trends?	Part 3 (each Chapter)	Each hazard explains the interaction between development trends and potential vulnerabilities		
SUMMARY SCORE				

12. Multi-Jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment *must* assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	N/A			

	SUMMARY SCORE
--	----------------------

MITIGATION STRATEGY: §201.6(c)(3): *The plan shall include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

13. Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A Does the new or updated plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?	Part 4, Chapter 13.2 (pp. 136)			
SUMMARY SCORE				

14. Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): *[The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the new or updated plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?	Part 4, Chapter 13 (pp. 135-149) and Appendix B (pp. 172-178)	Appendix B goes over the comprehensive range of actions, Chapter 13 details the selected actions		
B Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?	Part 4, Chapter 13 (pp. 135-149)			
C. Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?	Part 4, Chapter 13 (pp. 135-149)			
SUMMARY SCORE				

15. Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance

Requirement: §201.6(c)(3)(ii): *[The mitigation strategy] must also address the jurisdiction’s participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.*

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe the jurisdiction (s) participation in the NFIP?	Part 3, Chapter 6 (pp.76-77)			
B. Does the mitigation strategy identify actions related to participation in and continued compliance with the NFIP?	Part 4, Chapter 13, Strategy 6 (pp. 149)			
SUMMARY SCORE				

16. Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)	Part 4 (pp. 129-139)			
B. Does the new or updated mitigation strategy address how the actions will be implemented and administered, including the identification of the department responsible for implementing each action, existing and potential resources for each action and the timeframe for completion of each action?	Part 4, Chapter 13.5 (pp. 139-150)	See the charts for each of the strategies.		
C. Does the new or updated prioritization process include an emphasis on the use of a cost-benefit review to maximize benefits?	Part 4, Chapter 13.4 (pp. 138) and Appendix B (pp. 172-178)	Chapter 13.4 explains the process and Appendix B shows the Benefit-cost charts		
SUMMARY SCORE				

17. Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Location in the	SCORE

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

Element	Plan (section or annex and page #)	Reviewer's Comments	N	S
A. Does the new or updated plan include identifiable action items for each jurisdiction requesting FEMA approval of the plan?	N/A			
B. Does the new or updated mitigation strategy address how the actions will be implemented and administered, including the identification of the department responsible for implementing each action, existing and potential resources for each action and the timeframe for completion of each action?	N/A			
SUMMARY SCORE				

PLAN MAINTENANCE PROCESS

18. Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe the method and schedule for monitoring the plan, including the responsible department and other methods or schedules?	Part 5, Chapter 14.1 (pp. 151)			
B. Does the new or updated plan describe the method and schedule for evaluating the plan, including the responsible department and the criteria used to evaluate the plan?	Part 5, Chapter 14.1 (pp. 151)			
C. Does the new or updated plan describe the method and schedule for updating the plan within the five-year cycle?	Part 5, Chapter 14.1 (pp. 151)			
SUMMARY SCORE				

19. Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

A. Does the new or updated plan identify other local planning mechanisms available for incorporating the mitigation requirements of the mitigation plan?	Part 5, Chapter 14.2 (pp. 152-154)		
B. Does the new or updated plan include a process by which the local government will incorporate the mitigation strategy and other planning mechanisms, when appropriate?	Part 5, Chapter 14.2 (pp. 152-154)		
C. Does the updated plan explain how the local government incorporated the mitigation strategy into other planning mechanisms, when appropriate?	Part 5, Chapter 14.2 (pp. 152-154)		
SUMMARY SCORE			

Continued Public Involvement

Requirement §201.6(c)(4)(iii): *[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan explain how continued public participation will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	Part 5, Chapter 14.3 (pp. 154)			
SUMMARY SCORE				

Matrix A: Profiling Hazards

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.



Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)		A. Location		B. Extent		C. Previous Occurrences		D. Probability of Future Events	
	Yes		N	S	N	S	N	S	N	S
Avalanche	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Earthquake	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Expansive Soils	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee Failure	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hailstorm	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Severe Winter Storm	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tornado	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Windstorm	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend:
 §201.6(c)(2)(i) Profiling Hazards
 A. Does the risk assessment identify the location (i.e., geographic area affected) of each hazard addressed in the new or updated plan?
 B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the new or updated plan?
 C. Does the plan provide information on previous occurrences of each natural hazard addressed in the new or updated plan?

D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the plan?

Matrix B: Assessing Vulnerability

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that the new or updated plan addresses each requirement. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Note: Receiving an N in the shaded columns will not preclude the plan from passing.



Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)		A. Overall Summary Description of Vulnerability		B. Hazard Impact		§201.6(c)(2)(iii) Assessing Vulnerability: Identifying Structures				§201.6(c)(2)(iii) Assessing Vulnerability: Estimating Potential Losses				A. Loss Estimate		B. Methodology	
	Yes		N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend:

§201.6(c)(2)(ii) Assessing Vulnerability: Overview

- A. Does the **new or updated** plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- B. Does the **new or updated** plan address the impact of each hazard on the jurisdiction?

- B. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(B) Assessing Vulnerability: Estimating Potential Losses

(DRAFT: Completed by the Project Team as a guide for State and FEMA review)

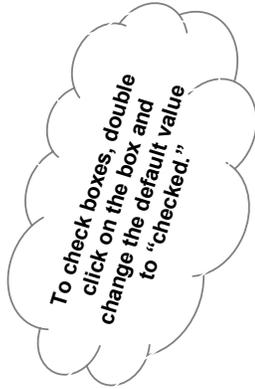
§201.6(c)(2)(ii)(A) Assessing Vulnerability: Identifying Structures

- A. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- B. Does the **new or updated** plan estimate potential dollar losses to vulnerable structures?
- C. Does the **new or updated** plan describe the methodology used to prepare the estimate?

Matrix C: Identification and Analysis of Mitigation Actions

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An "N" for any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.



Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)		A. Comprehensive Range of Actions and Projects		
	Yes	No	N	S	
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Earthquake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Severe Winter Storm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend:

§201.6(c)(3)(ii) Identification and Analysis of Mitigation Actions

- A. Does the **new or updated** plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?